

19 JAN 2001

CERTIFICATION UNDER 37 CFR 1.10

EL 740 388 335 US

Express Mail Mailing Number

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Date of Deposit

I hereby certify that this paper or fee, and any documents referred to as enclosed herein, are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to Box PCT, Commissioner for Patents, Washington, D.C. 20231.

Cederic Rodgers

Name of Person Mailing Application

Signature of Person Mailing Application

U S DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

ROY-010

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371

U S APPLICATION NO (if known, see 37 CFR 1.5)

Not known yet

09/744054

INTERNATIONAL APPLICATION NO.
PCT/GB99/02334

INTERNATIONAL FILING DATE
20 JULY 1999

PRIORITY DATE CLAIMED
20 JULY 1998

TITLE OF INVENTION

IMPROVEMENTS IN AND RELATING TO THE DELAYED VIEWING OF SCREEN READABLE SIGNALS SUCH AS
A TELEVISION BROADCAST

APPLICANT(S) FOR DO/EO/US

Kenneth AUSTIN

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☐ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 374(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☒ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US)
6. ☐ An English language translation of the International Application (35 U.S.C. 371(c)(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) 35 U.S.C. 371(c)(4)) and **Power of Attorney** (unexecuted).
10. ☐ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11 to 16 below concern other document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A FIRST preliminary amendment.
- ☐ A SECOND or SUBSEQUENT preliminary amendment.

US APPLICATION No. (if known, see 37 CFR 1.5) <div style="font-size: 2em; font-weight: bold; margin-top: -10px;">09/744054</div>	INTERNATIONAL APPLICATION NO. PCT/GB99/02334	ATTORNEYS DOCKET NUMBER ROY-010
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14. <input type="checkbox"/> A substitute specification and claims amended to conform the translated application to US practice 15. <input type="checkbox"/> A change of power of attorney and/or address letter. 16. <input checked="" type="checkbox"/> Other items or information: (a) copy of forms PCT/IB/308 and PCT/IB/332; (b) copy of the First Page of International Publication No. WO 00/05880 (c) copy of International Search Report; (d) copy of Written Opinion and Response thereto; (e) copy of International Preliminary Examination Report and its annexes.	
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17. <input checked="" type="checkbox"/> The following fees are submitted: BASIC NATIONAL FEE (37 CFR 1.492(A)(1)-(5)): Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO \$1,000.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$860.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search fee (37 CFR 1.445(a)(2)) paid to USPTO . \$710.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$690.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) \$100.00 ENTER APPROPRIATE BASIC FEE AMOUNT =	CALCULATIONS PTO USE ONLY												
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).	\$860.00 \$130.00												
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 15%;">Claims</th> <th style="width: 15%;">Number Filed</th> <th style="width: 15%;">Number Extra</th> <th style="width: 15%;">Rate</th> </tr> <tr> <td>Total Claims</td> <td style="text-align: center;">14</td> <td style="text-align: center;">0</td> <td style="text-align: center;">\$18.00</td> </tr> <tr> <td>Independent Claims</td> <td style="text-align: center;">3</td> <td style="text-align: center;">0</td> <td style="text-align: center;">\$80.00</td> </tr> </table>	Claims	Number Filed	Number Extra	Rate	Total Claims	14	0	\$18.00	Independent Claims	3	0	\$80.00	\$0.00 \$0.00
Claims	Number Filed	Number Extra	Rate										
Total Claims	14	0	\$18.00										
Independent Claims	3	0	\$80.00										
MULTIPLE DEPENDENT CLAIM(S) (if applicable)	\$270.00												
TOTAL OF ABOVE CALCULATIONS =	\$990.00												
<input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.	\$495.00												
SUBTOTAL =	\$495.00												
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).	\$0.00												
TOTAL NATIONAL FEE =	\$495.00												
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) \$40 per property	\$0.00												
TOTAL FEES ENCLOSED =	\$495.00												
	Amount to be refunded \$												
	charged \$												

US APPLICATION NO. (if known, see 37 CFR 1.5)

09/744054

INTERNATIONAL APPLICATION NO.
PCT/GB99/02334ATTORNEYS DOCKET NUMBER
ROY-010

- a. ☒ A check in the amount of **\$495.00** to cover the above fees is enclosed.
- b. ☐ Please charge my Deposit Account No. _____ in the amount of _____ to cover the above fees. A duplicate copy of this sheet is enclosed.
- c. ☒ The Commissioner is hereby authorized to charge any additional filing fees which may be required, or credit any overpayment to Deposit Account No. 15-0508. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

OLSON & HIERL, LTD.
20 North Wacker Drive
36th Floor
Chicago, Illinois 60606

Telephone: (312) 580-1180
Customer No.: 002387



SIGNATURE

Michael A. Hierl

NAME

29,807

REGISTRATION NO.

09/744054

JCO7 Rec'd PCT/PTO

19 JAN 2001
ROY-010

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Kenneth AUSTIN)
Serial No.: Not yet known) Examiner: Not yet known
Filed: 19 January 2001)
Int'l. Filing Date: 20 July 1999) Art Unit: Not yet known
Int'l. Appln. No.: PCT/GB99/02334)
For: Improvements in and Relating to the)
Delayed Viewing of Screen Readable)
Signals Such as a Television Broadcast)

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D. C. 20231
Box: PCT

Sir:

This communication is submitted in advance of prosecution on the merits of the above identified application. The application is based on the specification and claims of the published application, as amended in response to the Written Opinion (amended claims pages 14, 15 and 16 of the letter of June 20, 2000) and upon which the International Preliminary Examination Report is based, a copy of which is being concurrently filed herewith. Please amend this application as follows.

IN THE SPECIFICATION:

In the International Application as published, amend the specification as follows:

On page 1, after the title, insert the subtitle --Technical Field-- .

On page 1, between line 2 and line 3 of the text, insert the subtitle --Background of the Invention--.

On page 1, between line 16 and line 17, insert the subtitle --Summary of the Invention--.

On page 4, between line 14 and line 15 of the text, insert the subtitle --Brief Description of the Drawings--.

On page 5, between line 2 and line 3 of the text, insert the subtitle --Detailed Description of the Drawings and Preferred Embodiments--.

IN THE CLAIMS:

In Amended Sheets 14-16 of the claims upon which the International Preliminary Examination Report is based, amend the claims as follows:

On Amended Sheet 14, claim 3, line 1, delete "claim 1 or 2" and substitute therefor --claim 1--.

On Amended Sheet 14, claim 4, line 1, delete "anyone of the preceding claims" and substitute therefor -- claim 3--.

On Amended Sheet 14, claim 5, line 1, delete "anyone of the preceding claims" and substitute therefor -- claim 4--.

On Amended Sheet 15, claim 8, line 1, delete "claims 6 or 7" and substitute therefor --claim 6--.

On Amended Sheet 15, claim 9, line 1, delete "claims 6, 7 or 8" and substitute therefor --claim 6--.

On Amended Sheet 15, claim 10, line 1 delete "anyone of claims 6 to 9" and substitute therefor --claim 6--.

On Amended Sheet 15, claim 11, line 1, delete "anyone of claims 6 to 10" and substitute therefor --claim 6--.

On Amended Sheet 16, claim 13, line 1, delete "anyone of claims 6 to 12" and substitute therefor --claim 6--.

On Amended Sheet 16, please cancel claims 15 and 16 without prejudice.

REMARKS

Claims 1-14 are pending in the application. By this Amendment, the headings have been added to the specification and the claims have been placed in better form for United States practice.

The foregoing amendments are submitted in advance of prosecution so as to expedite the prosecution of this application. Early and favorable consideration on the merits is solicited.

Respectfully submitted,

Date: January 19, 2001

By



Michael A. Hierl, Reg. No. 29,807

OLSON & HIERL, LTD.
20 North Wacker Drive, 36th Floor
Chicago, Illinois 60606
(312) 580-1180

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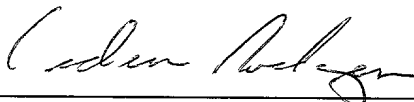
EL 740 388 335 US

"Express Mail" mailing label number

January 19, 2001

Date of Deposit

I hereby certify that this Preliminary Amendment was deposited with the U.S. Postal Service as "Express Mail Post Office to Addressee" under 37 C.F.R. 1.10 on the date indicated above and is addressed to the Commissioner for Patents, Washington, D.C. 20231, BOX PCT.



Cedric Rodgers

Title: Improvements in and relating to the delayed viewing of screen readable signals such as a television broadcast

The present invention relates to method and apparatus facilitating the delayed viewing of a television or video or other screen readable signal.

The invention has particular application to the delayed viewing of a television broadcast. There are occasions when someone viewing a real time television broadcast would benefit from an ability to interrupt viewing of the real time broadcast and to take up viewing sometime later without losing any of the intervening transmission or any transmission occurring when viewing is re-commenced. For example a viewer may be called away from the television momentarily, for example to answer the door or telephone call. Presently the only option is to accept that some of the transmission will be missed until the viewer is able to return to viewing the real time transmission or, if a video cassette recorder is available, to commence recording of the transmission for viewing at a later date when that transmission has finished, where for example the nature of the transmission is such that the viewer would not wish to commence viewing from anywhere other than from where the original interruption took place.

The present invention aims to provide a solution.

Accordingly, one aspect of the invention provides a method permitting the delayed viewing of a continuous sequential signal transmission, the method comprising recording a digitised version of the continuous sequential signal transmission on an ongoing basis onto a digital recording medium, and subsequently

reading the recorded signals whilst continuing to record the real time transmissions, and converting the recovered signals into a screen readable form for display and viewing on a television.

Conveniently the recording medium is divided into a plurality of memory blocks which are recorded sequentially. The memory blocks provide a finite capacity of memory. Preferably the method comprises recording in the memory blocks in a sequential fashion on a cyclical basis when viewing has been re-commenced within a time period covered by the finite memory of the digital recording medium. Where the finite capacity of the digital recording medium is about to be exceeded and viewing has not been re-commenced the method further comprises automatically triggering the operation of a video cassette recorder to record the transmitted signals for later viewing. Recording of the digital recording medium may be performed continuously whenever viewing is taking place or solely on operation of a user command for example in the event of an interruption taking place which dictates operation of the interrupt facility. In an alternative embodiment, instigation of the interrupt facility simultaneously instigates operation of a video cassette recorder. Tape positioning may be controlled automatically according to proposals in one of our co-pending patent applications and is not described further herein.

According to another aspect of the invention there is provided apparatus to permit the delayed viewing of a continuous sequential signal transmission, the apparatus comprising means to receive and process the continuous sequential signal transmission and where necessary to convert into a digital output, means to write the signal to a storage medium and means to read a signal recorded on the storage

medium, the write and read means being operable to permit reading of previously recorded signals whilst subsequently received signals are being recorded.

The digital storage medium conveniently comprises a plurality of recordable segments each having a finite capacity. Means is provided for recording the storage blocks in sequence and in a circulatory manner to record over previously recorded blocks if necessary.

Control means may be provided for instigating write and read functions. An on screen display is preferred from which the viewer can select from available options. Means is provided for identifying where the current write sequence commenced so that a subsequent read command starts at that point. Once reading has commenced the writing and reading can continue on a rolling basis with the read blocks being written over in due course. This is only possible where the read command has commence within a time span which can be accommodated by the finite capacity of the storage medium.

Advantageously the apparatus further comprises means for triggering the operation of a video cassette recorder to record the signal transmission either simultaneously with commencement of the interrupt record facility or at a predetermined time thereafter, for example when the finite storage capacity is about to be exceeded. An infra-red controller is preferably employed. A remote handset provides a convenient means of selecting operation of the video cassette recorder and/or the digital recording medium, preferably in conjunction with an on-screen display of the available functions.

In one embodiment the digital recording medium comprises a hard disk which

can be part of a computer or a set top device. In an alternative embodiment the signal is recorded on a digital video disk provided with both read and write heads which are operable to record and play video without interruption. Preferably, the apparatus further comprises means for digitising analog signals optional means for retrieving external video signals or external data, as well control circuitry for producing text or graphics for display on the TV screen.

Another aspect of the invention provides a method permitting the delayed viewing of a continuous signal transmission upon selection of additional on screen menus, the method comprising automatically recording a version of the continuous signal transmission onto a digital storage medium when additional temporarily on screen graphics and/or text and/or video images are displayed, re-commencing a delayed read of digitally stored signal and displaying same when prompted or automatically when temporarily on screen graphics and/or text and/or video images are no longer displayed.

The present invention will now be described further hereinafter by way of example only and with reference to the accompanying drawings in which:-

Figure 1 illustrates diagrammatically apparatus for implementing the invention according to a first embodiment,

Figure 2 illustrates diagrammatically apparatus for implementing the invention according to a second embodiment,

Figure 3 illustrates diagrammatically apparatus for implementing the invention according to yet another embodiment,

Figure 4 illustrates diagrammatically a delayed viewing/read facility according

to one aspect of the present invention, and

Figure 5 illustrates diagrammatically read and write features of the invention.

Referring to Figure 1, Illustrated pictorially is a video cassette recorder referenced VCR and a television with monitor screen referenced TV. Illustrated diagrammatically in block form is associated signal processing apparatus which according to a preferred embodiment of the invention is incorporated in a set top box or other stand alone unit represented by dotted outline 1. However, the desired signal processing apparatus may be incorporated in either the VCR or TV or any other component intended to be used with or incorporate one or both a TV or VCR. In other embodiments the connection with the VCR is optional.

The signal processing apparatus comprises a tuner T, an analog digital converter or codec C, a central processing unit CPU, a memory M associated with the CPU and a simultaneously readable and writable digital storage medium comprising a hard disk or other media S. Also illustrated is an infra-red receiver and transmitter IR, a video system VS and encoder and decoder means E and D respectively.

The set top box 1 has an input port 3 to receive television broadcasts or other continuous sequential signal transmission intended for viewing on a VDU or television screen TV. The tuner T decodes the selected broadcast (assumed to be an analog signal in the illustrated embodiment) and transmits it to the analog digital converter C along signal line 4. A corresponding signal is also transmitted either directly to the VCR and the TV or in the case of the illustrated embodiment by way of encoder E. The function of the encoder will be described further hereinafter. The analog digital

converter C converts the signal from the tuner into a digital signal suitable for recording on the digital storage medium, which in case of a set top box comprises a hard disk. A write head and a read head are provided and shown diagrammatically by arrows R and W. The central processing unit runs the installed software and controls operation of the read write functions, the infra-red control unit, the encoder, the decoder and the video system. Appropriate control paths being shown in the diagram. The output to the television is shown at 11. Where the function of the digital converter is required the real time signal finds its way from the input 3 to the output 11 via the tuner, line 4, line 5 and line 6. Where the signal is to be recovered from the hard disk by the read head R it is transmitted to the output by way of lines 5 and 6. Where the TV picture is being recovered from the video cassette recorder it is transmitted to the output by way of line 6 and via the video system in the illustrated embodiment. In an alternative embodiment the output from the VCR could be directed to the analog digital converter to facilitate writing to the hard disk and subsequent delayed retrieval via lines 5 and 6.

In our co-pending applications we describe how file indexes and tape position data can be recorded onto a video tape and techniques for determining tape position and generating on-screen displays for selecting available options. The central processing unit CPU runs software which controls these aspects and those of the present invention and controls the generation or transmission of any on-screen display. The memory M stores the VCR characterisation data, current file index and the control program. The encoder is provided to encode any index information, or other data for recording on the tape and the decoder decodes it for display on the

screen and/or storage memory.

In use, where a television program is being viewed on the television screen and the viewer has to interrupt viewing for whatever reason, he can operate a controller, for example a hand held infra-red controller, to display, in the context of this invention, various menu options on-screen in relation to operation of what we term the interrupt/delayed read facility. In one embodiment where such an option is selected recording of the received television program commences on the hard disk with successive blocks of memory being recorded. The position in the memory where recording is started is noted. The amount of available recording space is known and continuously monitored by the central processing unit. The hard disk maybe capable of storing say 10 minutes worth of broadcast. Thus, if the viewer returns within that time he can then select from the options menu to continue viewing on a delayed viewing basis by instigating a read function whereupon the recorded transmission is read from a point where recording commenced. Writing of the transmission continues as does reading over of the subsequently recorded material until the user de-selects the interrupt/delayed read facility. By this means the viewer does not miss any of the transmission albeit that he views it sometime after its real time transmission.

The ability to view a transmission on a delayed read basis offers a number of additional benefits. For example, whenever the interrupt/delayed read function is operating it is possible to instigate an instant replay function or to perform the equivalent of a short rewind, and replay an earlier section of the transmission albeit that the amount of back tracking which is possible is limited to the amount of

available program memory between the current read position and the current write position. The control unit can also include a fast forward function so that the material which is being read on a delayed read basis can be viewed more quickly or irrelevant material skipped through e.g. commercial breaks; thus enabling the viewer to get up to real time transmission should he so wish.

Further options facilitate operation of the video cassette recorder to record the transmission to video tape either automatically if viewing is not commenced within the limitations of the capacity of the digital storage medium or instantly if this is preferred. The control of the video tape position to ensure adequate space can be achieved in a manner described in our co-pending applications and is not described further hereinafter.

Reference is now made to Figure 2 which shows an embodiment of the invention which uses a digital video disk as the digital storage medium. The digital video disk (DVD) is provided with write and read heads W and R respectively which are able to function simultaneously. In the illustrated embodiment it is assumed that the signal being received is a digital television signal which goes directly into a digital receiver DR which is then relayed to the digital video disk for recording purposes or directly to line 6 which carries the TV picture signal to the output line 11 by way of a video system VS. The circuitry further includes a central processing unit (CPU) a memory M, and an infra-red controller IR to receive controls from a hand set. These function as described previously in the context of the invention and as concerns generation of on-screen displays in relation to indexes stored in memory and selectable programming options. In the illustrated embodiment optional inputs are

shown at X and Y feeding an interface I and then into a coder C. Input X represents an external video signal and input Y an external data signal.

In operation the digital signal is decoded and the viewer can watch the decoded signal on the television monitor in the usual way. Again the control unit CPU can be used to generate text or graphics for on-screen viewing, these being relayed to the video system via line 8. Using an on-screen menu the user can select to instigate the interrupt/delayed read procedures in which case the signal can be written to the digital video disk when in the interrupt mode. Again, as with the previous embodiment the recordable digital video disk has a finite capacity. Where this not exceeded the viewer has the option to commence reading of the recorded material where after writing and reading is performed on the same basis as previously described.

Where the optional inputs are available then the control unit can be used to control recording of external video signals and/or external data onto the recordable digital video disk for subsequent replay on a delayed transmission basis or otherwise.

Figure 3 illustrates an embodiment which corresponds almost exactly to that of Figure 2 and like reference numerals have been used for corresponding parts but in this instance the television broadcast is assumed to be an analog signal which is decoded by tuner T passed along line 4 to the coder C where it is digitised and then passed to the recordable digital video disk DVD to be written to the disk where required. Again on-screen menus are used as described previously to facilitate easy operation of the system.

Referring now to Figure 4, here we illustrate diagrammatically an arrangement

which operates continuously on a delayed read basis. A recordable digital video disk DVD is interposed in a signal line 3 receiving real time television broadcasts and which feeds to the write head of the digital video disk. Processing circuitry is omitted for clarity. The information recorded is read after a predetermined (usually preset) interval by the read head and fed on a delayed read basis to the television TV along line 5. The intention here is to have this operating on a full-time basis so that the viewer is able to benefit from instant replays and also potential rewinds and fast-forwards in the jargon of tape recording. Thus as illustrated schematically in Figure 5 the digital disk may contain N segments of recordable memory which may have a total capacity equivalent to 10 minutes of video transmission and this is recorded on a continuous loop basis as indicated by arrow A. The memory can be retrieved for anything up to 10 minutes behind the real time transmission. In practice the read position is preferably just less than 10 minutes ahead of the record position to facilitate operation of fast-forward and rewind facilities, especially replay, without losing transmission continuity. Once a memory segment has been read it will be over-written in due course.

CLAIMS

1. A method permitting the delayed viewing of a continuous sequential signal transmission, the method comprising recording a digitised version of the continuous sequential signal transmission on an ongoing basis onto a digital recording medium, and subsequently reading the recorded signals whilst continuing to record the real time transmissions onto the said digital recording medium, and converting the recovered signals into a screen readable form and viewing on a television, and characterised by automatically recording the continuous sequential signal transmission when other temporary text and/or graphics are present on screen.
2. A method as claimed in claim 1 in which the recording medium is divided into a plurality of memory blocks and the method comprises recording said blocks sequentially.
3. A method as claimed in claim 1 or 2 and further comprising writing over previously recorded memory block when the available capacity of unrecorded memory blocks is exceeded.
4. A method as claimed in anyone of the preceding claims and further comprising the step of instigating operation of a video cassette recorder to record the signal transmission.
5. A method as claimed in anyone of the preceding claims in which instigation of the recording or reading step is selected from an on-screen menu.
6. Apparatus to permit the delayed viewing of a continuous sequential signal transmission, the apparatus comprising means to receive and process the continuous sequential signal transmission and where necessary to convert into a digital output,

means to write the signal to a storage medium and means to read a signal recorded on the storage medium, the write and read means being operable simultaneously to permit reading of previously recorded signals whilst signals currently being received are being recorded and characterised by means to trigger automatic recording of the continuous sequential signal transmission when other temporary text and/or graphics are present on screen.

7. Apparatus as claimed in claim 6 in which the storage medium comprises a plurality of recordable segments.
8. Apparatus as claimed in claims 6 or 7 and further comprising control means to instigate write and read functions.
9. Apparatus as claimed in claims 6, 7 or 8 and comprising means to generate an on-screen display from which the write and read options can be selected.
10. Apparatus as claimed in anyone of claims 6 to 9 comprising means identifying where in the memory the current write command was commenced and means for directing the read head to commence reading from the same place on receipt of a read command.
11. Apparatus as claimed in anyone of claims 6 to 10 in which the control means initiates operation of a video cassette recorder on commencement of the write command or at a prescribed interval thereafter.
12. Apparatus as claimed in claim 11 in which actuation of the videocassette recorder is selected from an on-screen display as one of a number of options.
13. Apparatus as claimed in anyone of claims 6 to 12 in which the storage medium is one of a hard disk or a digital video disk.
14. A method permitting the delayed viewing of a continuous signal transmission upon

selection of additional on screen menus, means being provided for temporarily displaying on screen graphics and/or text and/or video images, and the method comprising recording a version of the continuous signal transmission onto a digital storage medium, re-commencing delayed read of digitally stored signal and displaying same when prompted or automatically when said temporarily on screen graphics and/or text and/or video images are no longer displayed, and characterised in that the recording of the continuous signal transmission is commenced automatically when additional temporarily on screen graphic and/or text and/or video images are displayed.

15. A method permitting the delayed viewing of a continuous sequential signal transmission substantially as hereinbefore described with reference to the accompanying drawings.
16. Apparatus to permit the delayed viewing of a continuous sequential signal transmission constructed and arranged substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

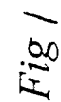


Fig 1

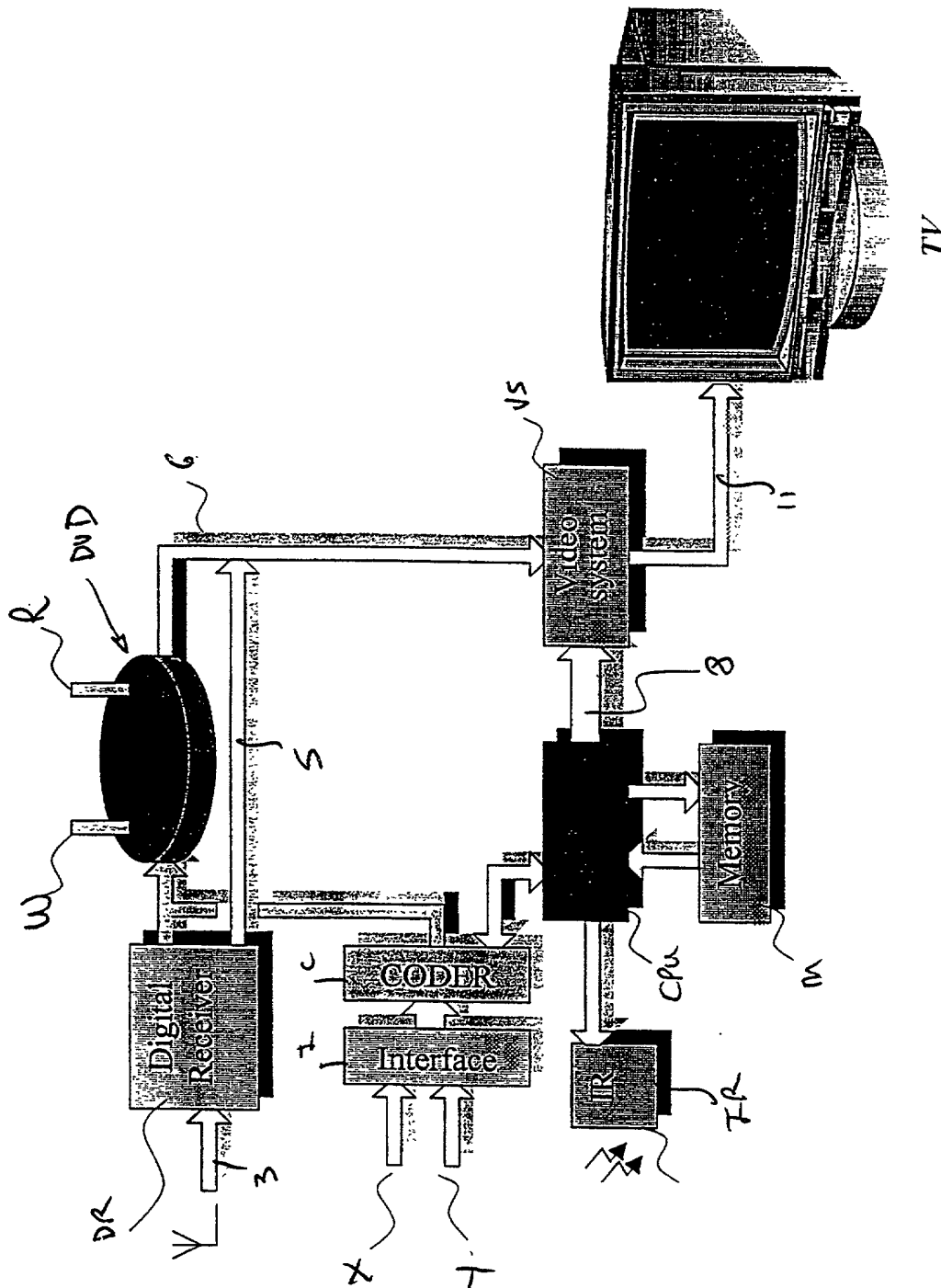


Fig 2

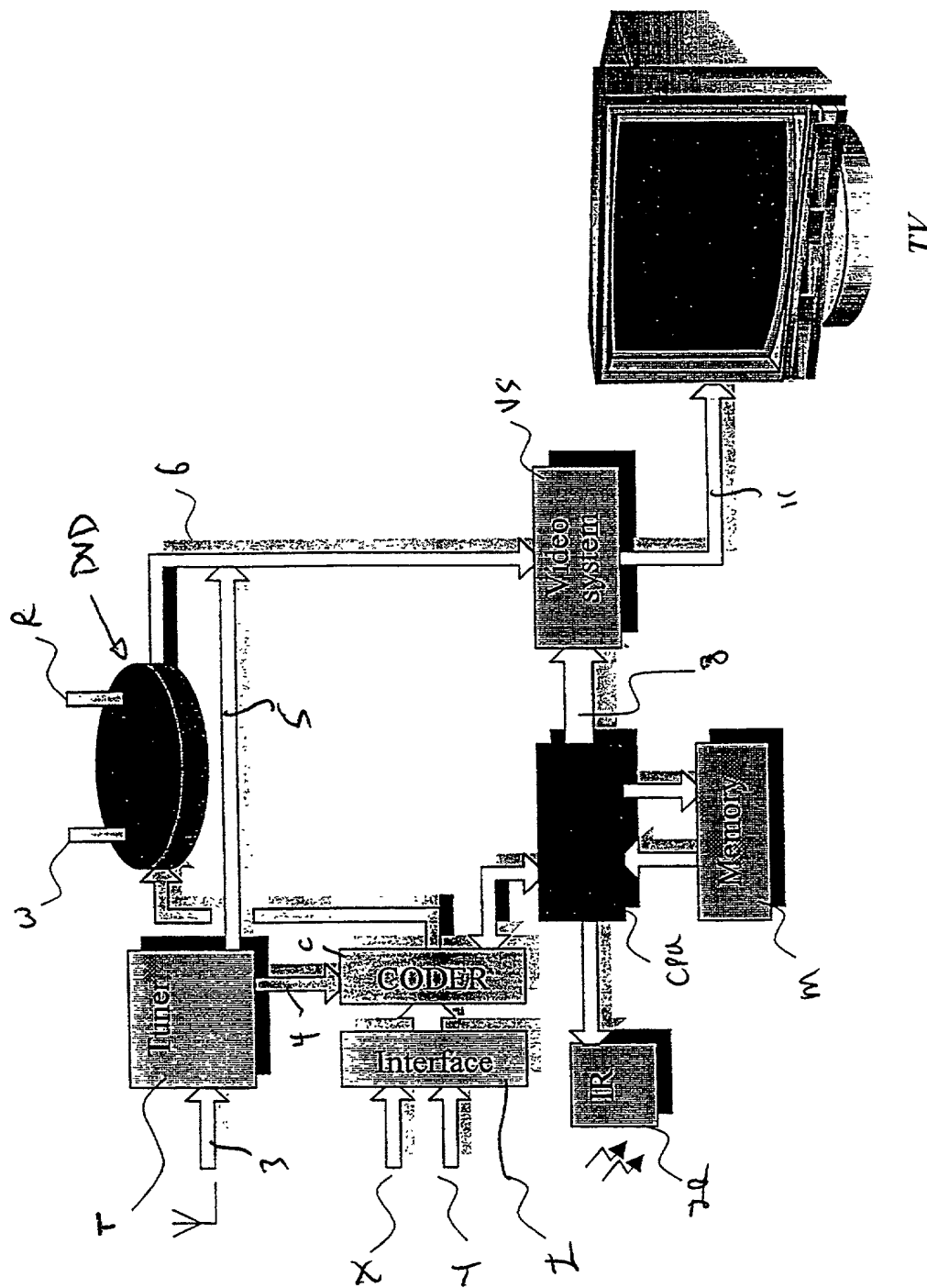
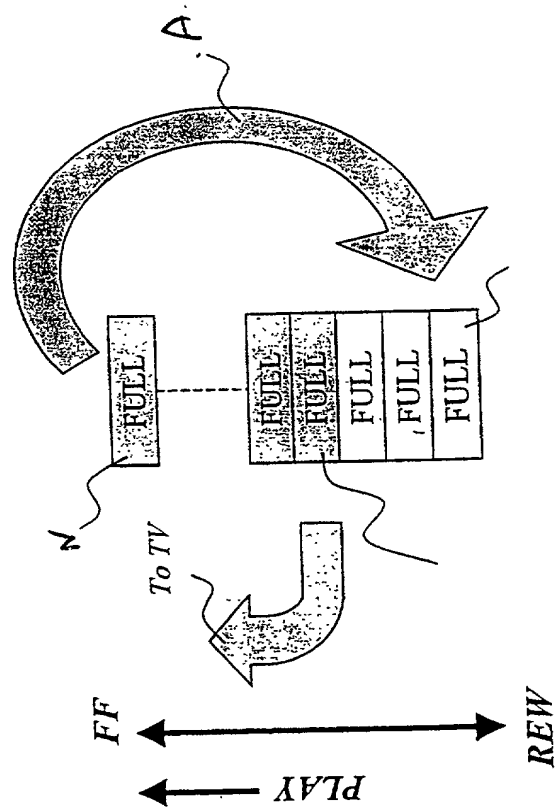
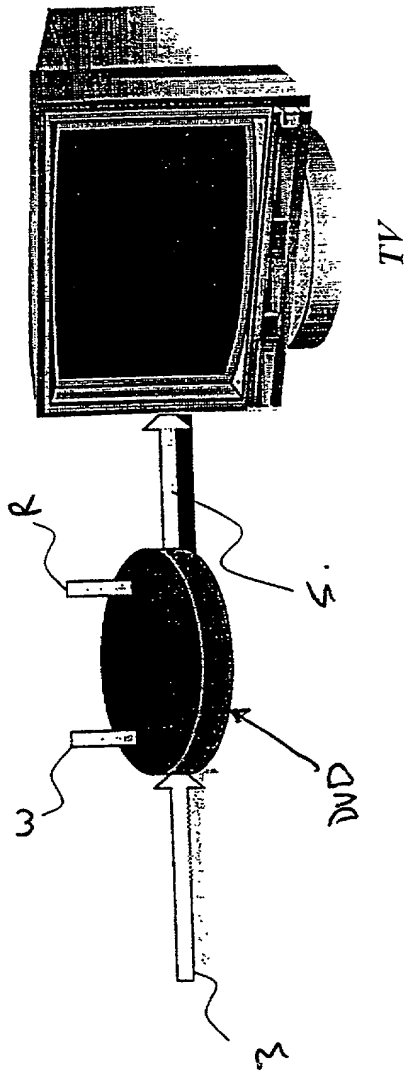


Fig 3



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**DECLARATION FOR UTILITY OR
DESIGN
PATENT APPLICATION
(37 CFR 1.63)**

☐ Declaration Submitted with Initial Filing OR ☒ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorney Docket Number

First Named Inventor

AUSTIN, Kenneth

COMPLETE IF KNOWN

Application Number

Filing Date

Group Art Unit

Examiner Name

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Improvements in and relating to the delayed viewing of screen readable signals

the specification of which

(Title of the Invention)

☐ is attached hereto

OR

☒ was filed on (MM/DD/YYYY) 07/20/99 as United States Application Number or PCT International

Application Number PCT/GB99/02334 and was amended on (MM/DD/YYYY) (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
9815641.7	GB	07/20/98	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (MM/DD/YYYY)	<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

[Page 1 of 2]

Burden Hour Statement: This form is estimated to take 0.4 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

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I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)

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As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

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☐ Registered practitioner(s) name/registration number listed below

Name	Registration Number	Name	Registration Number
Arne M. Olson	30,203	Michael A. Hierl	29,807
Dolores T. Kenney	31,269	Talivaldis Cepuritis	20,818
Seymour Rothstein	19,569	Daniel J. Deneufbourg	33,675

☒ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

Direct all correspondence to: ☐ Customer Number OR ☒ Correspondence address below

Name	<u>HIERL, Michael A.</u>				
Address	<u>OLSON & HIERL, LTD.</u>				
Address	<u>20 NORTH WACKER DRIVE, 36TH FLOOR</u>				
City	<u>CHICAGO</u>	State	<u>IL</u>	ZIP	<u>60606</u>
Country	<u>US</u>	Telephone	<u>(312) 580-1180</u>	Fax	<u>(312) 580-1189</u>

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor:		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle if any)		Family Name or Surname	
<u>Kenneth</u>		<u>Austin</u>	
Inventor's Signature		Date	<u>7/2/01</u>
Residence: City	State	Country	Citizenship
		<u>GB</u>	<u>GB</u>
Post Office Address	<u>Weaverham Grange, 7 Beechwood Avenue, Hartford GBX</u>		
Post Office Address	<u>Northwich, Cheshire CW8 3AR, United Kingdom</u>		
City	State	ZIP	Country
<u>Hartford</u>	<u>GB</u>	<u>CW8 3 AR</u>	<u>GB</u>

☐ Additional inventors are being named on the _____ supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto

DECLARATION	REGISTERED PRACTITIONER INFORMATION (Supplemental Sheet)
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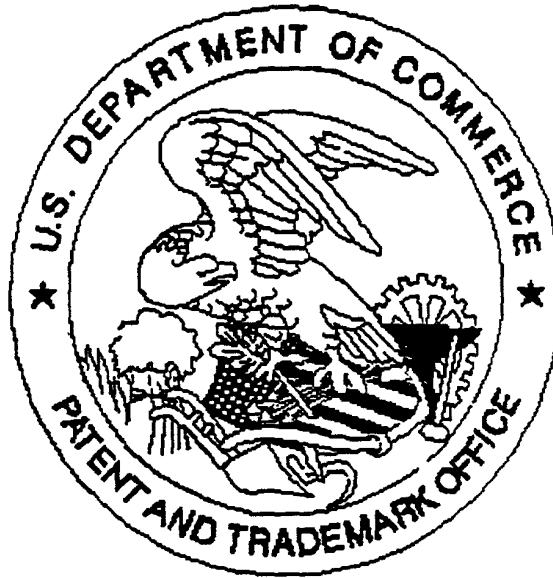
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